

B. Braun Melsungen

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Claims

1. Catheter insertion device comprising

An approximately hollow-cylindrical catheter hub (2) to whose distal end a catheter (4) is attached,

a needle hub (8) having a hollow needle (9) attached thereon and extending in the ready position through the catheter hub (2) and the catheter (4),

a needle guard element (13) arranged displaceably on the needle (9) in the catheter hub (2) and having an engaging section (13c) which engages with an engaging means (9b) formed near the needle tip when the hollow needle (9) is removed from the catheter hub (2),

characterized in that

between the catheter (4) and the needle guard element (13) a check valve (7; 17) is arranged in the catheter hub (2), through which the hollow needle (9) extends in the ready position and which automatically closes after the removal of the needle.

2. Device according to claim 1, wherein the catheter hub (2) has a two-part form and the check valve (7; 17) is held between a distal hub element (3) and a proximal hub element (5) which are joined to one another.

3. Device according to claims 1 and 2, wherein the check valve (17) has radially elastically expandable valve flaps (17c) which can be moved into the open position by the fluid pressure of a syringe (14) inserted in the catheter hub.

4. Device according to claim 3, wherein on the inner circumference of the catheter hub (2) a radial projection (5b) is formed by which the needle guard element (13) is held in the ready position.

5. Device according to claims 1 and 2, wherein as a check valve there is inserted in the catheter hub (2) a valve disc (7) which has radial slits (7a) starting from the middle;

and a valve actuating element (10; 11, 12) is displaceably guided in the catheter hub and has a hollow space for receiving the needle guard element (13).

6. Device according to claim 5, wherein the valve actuating element (11, 12) is formed as a hollow cylinder with a truncated cone-shaped distal end section.
7. Device according to claim 6, wherein on the inner circumference of the hollow cylindrical valve actuating element (11) a radial projection (11d) is formed for positioning the needle guard element (13).
8. Device according to claim 5, wherein the valve actuating element (10) has a truncated cone-shaped abutting section (10a) from which in the axial direction at least one plunger (10b) protrudes.
9. Device according to one of the preceding claims, wherein the needle guard element is formed as a spring clip (13) which has diametrically opposite spring arms (13a, 13b) starting from a rear wall (13c) provided with a bore, wherein the bent end sections of the spring arms (13a, 13b) overlap and block the needle tip when the engaging means (9b) of the needle comes to abut on the rear wall (13c).